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ABSTRACT

Information on indicators of change in American higher education that either individually or collectively might be used to measure the health of the nation's colleges and universities is presented. Change indicators include student/faculty ratio, faculty appointments, student attitudes and characteristics, percentage of female faculty and students, and measures of the quality of new faculty members. Success in detecting the important changes occurring in institutions can prove critical in deciding which changes should or should not occur. Failure to detect these trends can lead to institutional ossification and deterioration of entire systems. Statistical information is presented on the following topics: (1) faculty-student ratio in U.S. colleges and universities (1879-1982); (2) PhDs awarded and faculty appointments by 5-year periods (1945-1979); (3) percentages of women enrolled in American colleges and universities compared with percentages of women faculty; and (4) percentage of American Rhodes scholars and Phi Beta Kapa recipients choosing academic careers by 5-year periods (1945-1979). Whether such indicators can provide information vitally important to the leaders of American higher education can only be decided by them. Contains 17 references. (SM)

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INDICATORS OF CHANGE IN AMERICAN HIGHER EDUCATION

By

David Madsen and Don Williams

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INDICATORS OF CHANGE IN AMERICAN HIGHER EDUCATION

Persons responsible for the leadership of American colleges and universities keep a close watch on what they take to be important changes occurring in their institutions. Success in detecting these trends can prove critical in deciding what changes should or should not occur; failure to detect these trends can lead, on the other hand, to institutional ossification and deterioration of entire systems of higher education.

What, we ask, might be some of the indicators of vital changes to which systematic attention should be paid? Numbers have a certain appeal and can frequently be obtained. The number of students and faculty, dollars spent, courses, books, laboratories, grants and contracts is usually available. The quality of students, faculty, courses, books, and the like, however, may have greater appeal; and the indicators used for determining quality may or may not be numerical. Even so, when they are approached with caution, numbers can be indicators of both quantity and quality.

An example of a specific indicator said to be of vital importance to the education of a college student is the "student-faculty ratio." Many smaller colleges and universities in the United States have been proud of what they refer to as their "low student-faculty ratio." A low ratio, it is claimed, results in more student-faculty interaction, and this, in turn, results in an increase in student learning. Critics of this argument insist, correctly no doubt, that there is more to education than a mere low

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student-faculty ratio and that unless the faculty and students are highly qualified and enthusiastic a low ratio merely guarantees mediocrity in an intimate setting.

Assuming for the moment, however, that the student-faculty ratio is an index or indicator of some importance, has there been any significant change in that ratio this century?

Figure 1.

Anyone who has gathered (or reported) figures on college student enrollment and the size of the faculty knows how difficult it is to obtain numbers on which one can rely. Nevertheless, some rough idea of change can be had by the numbers in Figure I. To the surprise of few, perhaps, the overall student faculty ratio seems to have increased significantly in the 1960s. But there is a small surprise in the fact that the ratio remained relatively stable (at about 10 to 1) from 1879-80 to 1959-60, and another surprise in the fact that it seemed to continue to climb in the 1970s and 1980s, at a time when, we were told, there were too many young Ph.D.s unable to find employment in academe. [11] **Howard Bowen and Jack Schuster challenged this view as follows: "Despite much opinion to the contrary, unemployment rates among Ph.D.s have remained remarkably low." [3, p. 186].** Of course, the number of Ph.D.s produced by American universities has risen three-fold to about 30,000 within the past 25 years (another change of which educational leaders probably ought to be aware). However, consider Figure 2 which reveals that the number of faculty appointments rose dramatically between 1960 and 1965, and then,

as dramatically, declined in the late sixties and continued to decline in the 70s and 80s.

Figure 2.

When the decline in faculty appointments is combined with an increase in the number of students it is no wonder that the faculty-student ratio shows a significant increase over what it had been for 80 years. And if an increase in the student-faculty ratio is an important indicator of the health of the American educational enterprise that fact should be known by everyone with any concern for the welfare of our colleges and universities.

Are there other examples of changes? Of course there are. Student attitudes, for example, can shift dramatically, as the findings of Astin and his colleagues reveal [1]. Another striking feature of today's student life is the more prominent role women now play in that life. In1935 an article in The Journal of Higher Education [13, p. 106] described "the average Vassar Freshman" of that year:

> She is five feet five inches tall; she weighs 126 1/5 pounds; her lung capacity is 205.67 cubic inches; the strength of the grip of her right hand is 69 pounds; she can run 80 yards on a circular, unbaked track in 15 4/5 seconds; she can toss a one-pound weight 40 feet; in the standing broad jump event she can jump 5 feet 4 inches, and, finally, in striking a blow her strength is 74 pounds.

We do not know--or want to know--whether the average Vassar freshman of today is five feet five inches tall; nevertheless it is important that college and university leaders recognize changes in the composition of student bodies, changes such as those of gender, race, ethnicity and the like. They should recognize the fact, for example, that only recently has the enrollment of women surpassed that of the decade of the twenties when the women's suffrage movement helped encourage women students to enroll.

Figure 3.

Figure 3 also shows how the percentage of faculty members who are female has changed during these decades. One might assume that in the decade following a change in the percentage of female students a change might also occur in the percentage of female faculty members. Such a pattern does not appear, however, nor have the affirmative action requirements or the increase in female student enrollments of recent decades produced a dramatic increase in the percentage of female faculty members teaching in American colleges and universities. Perhaps that change will not occur until the retirement of the generation of faculty members hired in the early 1960s who were predominantly male.

Changes in the characteristics of the faculty are of vital importance to the leaders of American higher education. In their excellent book: American Professors: A National Resource Imperiled (1986) Howard R. Bowen and Jack H. Schuster commented on the changing quality of the

American professoriate [3, p. 119]. "It is heartening to find that the quality of persons currently entering the [academic] profession is excellent." But a bit later they add: "What lies ahead? It is not difficult to find evidence that general interest in an academic career, including interest among the exceptionally talented, is waning." Part of the evidence they offer is in the form of a chart showing a decline in the percentage of Rhodes Scholars and Phi Beta Kappans choosing academic careers between 1945-1979.

Figure 4.

Will Anyone Pay Any Attention to Change?

One might assume that college and university leaders would be eager to have access to a body of research and scholarhip on the basis of which to anticipate and perhaps influence change; and yet in an article entitled "Trees Without Fruit: The Problem with Research About Higher Education," George Keller [10, p. 7] wrote as follows:

> "Hardly anyone in higher education pays attention to the research and scholarship about higher education. College presidents and deans do not consult the literature or use it.... Many presidents, confess they have not read a book about higher education in years."

Putting aside the question: How many physicians, dentists, engineers, business executives, Presidents of the United States, and others

are attentive to the literature of the field in which they practice? it is reasonable to suppose that educational leaders, most of whom have been trained in research skills, would have keen interest in information that gives some indication of changes within the enterprise they lead. Yet, as Derek Bok has indicated [2, p. 66], decision makers in higher education rarely have occasion to follow the publications of those who do research on higher education.

> The investigators are typically psychologists or professors of education who work for their own professional purposes; they rarely have close contact with campus officials who might profit from their studies. Without a connection between investigators and decisionmakers, such research lacks prestige, and much of it has no practical value for those who actually help to shape educational policies.

If leaders of American colleges and universities pay little attention to the research done by 'psychologists or professors of education' on their faculties, where do they look? The 1986-87 Fact Book on Higher Education [5] published by the American Council on Education, for example, is loaded with information on faculty, students, enrollment, and various demographic trends. With data supplied to the government by the annual Higher Education General Information Survey (HEGIS), the U.S. Department of Education publishes each year The Condition of Education, which includes a section reporting trends occurring in post-secondary education [15]. Change, a periodical read by many in higher education, contains a section called "change trendlines" in which data showing one

trend or another is featured. The National Data Service for Higher Education located in Boulder, Colorado, provides still another source of information helpful to decision makers, and each autumn The Chronicle of Higher Education devotes an issue to trends nationwide as well as worldwide.

In addition, most colleges and universities have within their staff someone who not only keeps track of national trends but also generates data specific to their own campus. These two kinds of data--national and local--are combined to provide bases for decisions that have to be made at the local campus level. Once known as institutional researchers, these local staff people today carry a number of titles, many of them tied to the planning function. They provide an important service to their institutions.

Perhaps one difficulty is that there is no "Dow-Jones Industrial Average," no "Gross National Product," no "Prime Rate," no "leading economic indicators"--in short, no relatively easy-to-follow indicators of the health of the American educational enterprise. In another essay we have proposed the establishment in higher education of something akin to the Dow-Jones Industrial Average on which the media and the business world depend so heavily in determining the economic health of the nation. Called the "Harper Jordan Higher Education Index" in honor of those two great university presidents, William Rainey Harper of Chicago and David Starr Jordan of Stanford, our index would be nothing more than an annual report on the non-capital expenditures (adjusted for inflation) of a stratified sample of 330 colleges and universities divided by the number of students and faculty [11].

Clearly no single index, however, will suffice for describing what is happening in anything as complex as American higher education any more than the Dow-Jones Index by itself suffices to describe the business world.[22] **Some business analysts prefer the Standard and Poor index because it is based on 500 corporations instead of only 30.** And yet as Charles Dow and Edward Jones discovered early in their efforts, reports on the average stock prices of a surprisingly small number of carefully-selected industrial firms did provide information of vital importance to investors and business leaders alike.

In this paper we have called attention to a number of important indicators--student/faculty ratio, faculty appointments, student attitudes and characteristics, percentage of female faculty and students, measures of the quality of new faculty members, and the like--which either individually or collectively might be used in measuring the health of the nation's college and universities.

Whether these indicators would provide the information vitally important to the leaders of American higher education, only they can decide. For many of them, for instance, financial matters absorb most of their time. D. Kent Halstead's indices of the prices of higher education provide one such indicator [7], and the Illinois State University Center for Higher Education reports annually on state government expenditures for higher education [8].

In an essay published in The Chronicle of Higher Education [11, p. B1] we wrote as follows:

"In preparing his report on medical education in 1910, Abraham Flexner faced the problem of assessing 155 American medical schools. 'In half an hour or less,' he wrote, 'I could sample the credentials of students filed in the dean's office....A single question elicited the income of the medical school....A stroll through the laboratories disclosed the presence or absence of apparatus, museum specimens, library, and students; and a 'whiff' told the inside story regarding the manner in which anatomy was cultivated.'" [9, p. 121]

We believe that the search for a few sound indicators of change--a few important 'whiffs'-- is worthwhile. We would find exciting the dialogue leading to agreement on just what such indices should contain. Let us begin.

References

1. Astin, A.W., Green, K.C., and Korn, W.S. The American Freshman: Twenty Year Trends. Los Angeles: Cooperative Institutional Research program American Council on Education, UCLA, 1987.

2. Bok, D. Higher Learning. Cambridge, Mass.: Harvard University Press, 1986.

3. Bowen, H.L. and Schuster, J.H. American Professors: A National Resource Imperiled. New York: Oxford University Press, 1986.

4. Carnegie Council on Higher Education. Opportunities for Women in Higher Education. New York: McGraw-Hill, 1973.

5. Fact Book on Higher Education, 1986-87. Washington, D.C.: American Council on Education/Macmillan Co., 1987.

6. Grant, W. V. and Snyder, T. D. Digest of Education Statistics, 1983-84. Washington, D.C.: National Center for Educational Statistics, U.S. Government Printing Office, 1984.

7. Halstead, D. Kent. Higher Education Prices and Price Indexes. Washington, D.C.: National Institute of Education, 1975-78. Research Association of Washington, --1987.

8. Jaschik, S. "State Funds for Higher Education Total $34 Billion: 11-Pct. Biennial Rise Equals Lowest in 29 Years." The Chronicle of Higher Education, (November 4, 1987), 34:A27-31.

9. Flexner, A. I Remember. New York: Simon & Schuster, 1940.

10. Keller, G. "Trees without Fruit: The Problem with Research Aabout Higher Education." Change. (January/February, 1985), 17:7-10.

11. Madsen, D. and Williams, D. T. "Higher Education Needs Its Own Dow

Jones to Keep Track of Colleges' Financial Health." The Chronicle of Higher Education, 24 February 1988, p. B1.

12. Pollard, L. A. Women on College and University Faculties. New York: Arno Press, [1977].

13. "The Reporter." The Journal of Higher Education, (February, 1935), 6:105-110..

14. U.S. Commissioner of Education. "Annual Report: Universities and Colleges," Annual Report of the Department of Interior. Washington, D.C.: Government Printing Office, 1870-1930.

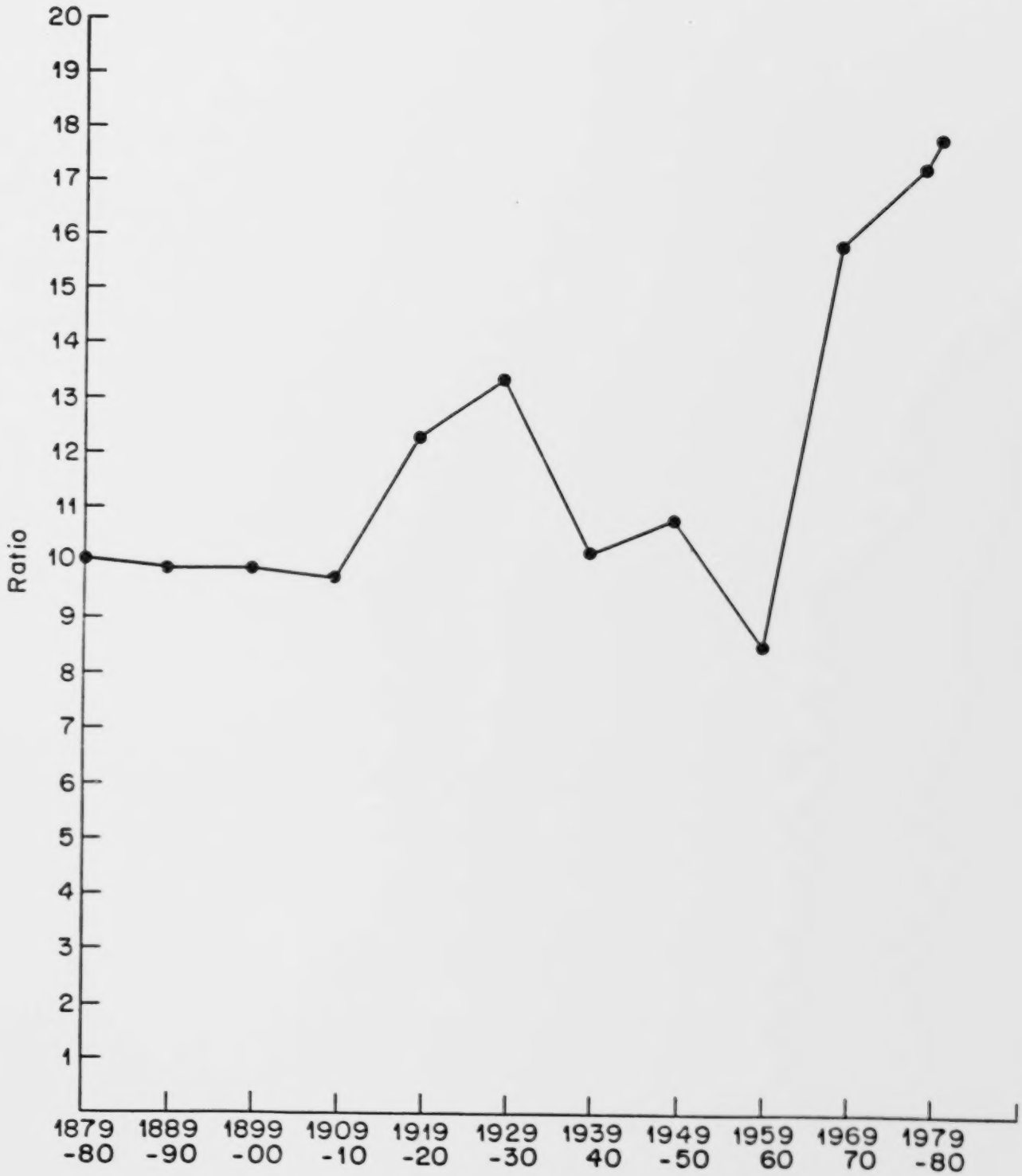
15. U.S. Department of Education. The Condition of Education. Washington, D.C.: U.S. Government Printing Office, 1987.

16. U.S. Office of Education. Biennial Survey of Education in the U.S. Washington, D.C.: Government Printing Office, 1940 to present.

17. U.S. Department of Education, Office of Research and Improvement, Digest of Education, Washington, D.C.: Government Printing Office, 1985-86.

FIGURE 1

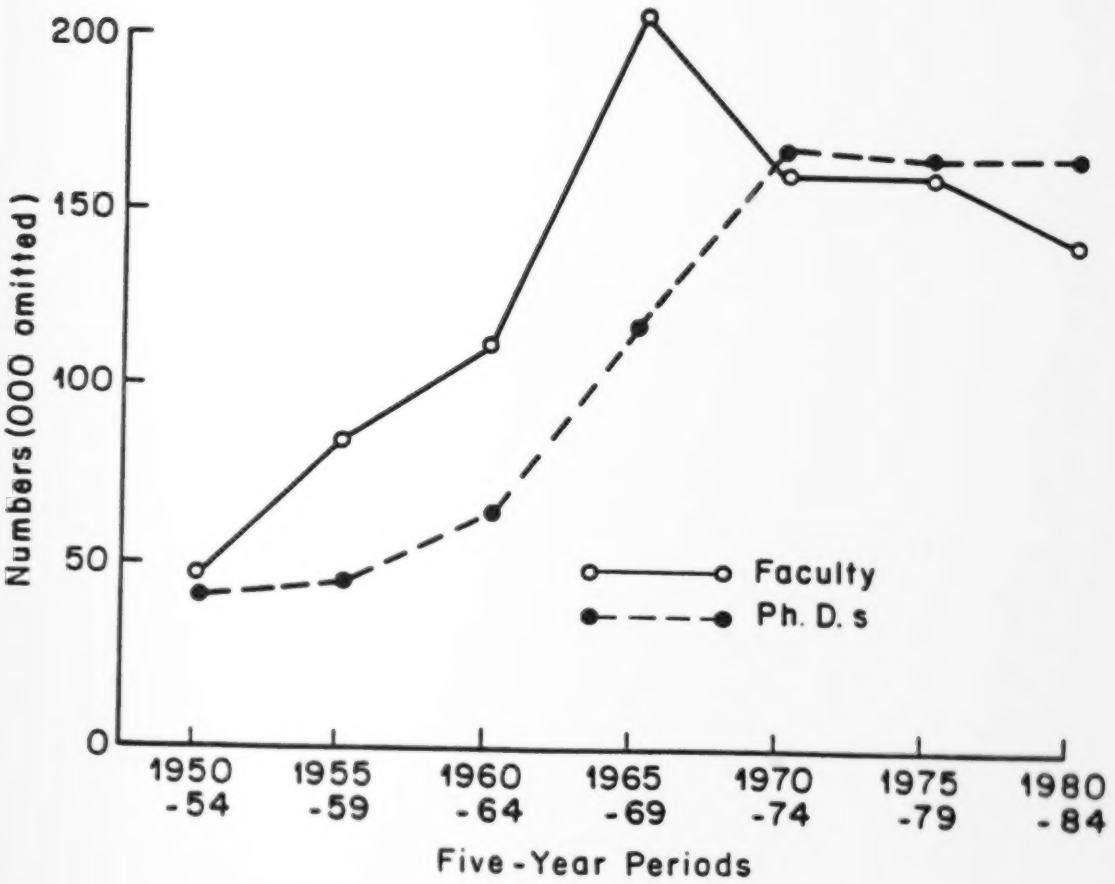
Faculty - Student Ratio in U.S. Colleges & Universities, 1879 - 1982*



*Beginning in 1969-70 "data include only instructional faculty with the rank of instructor or above." Page 110, U.S. Department of Education Office of Research and Improvement, Digest for Education, 1985-86. Faculty figures for 1879-80; 1889-90; 1969-70; 1979-80; 1981-82 are estimates.

FIGURE 2

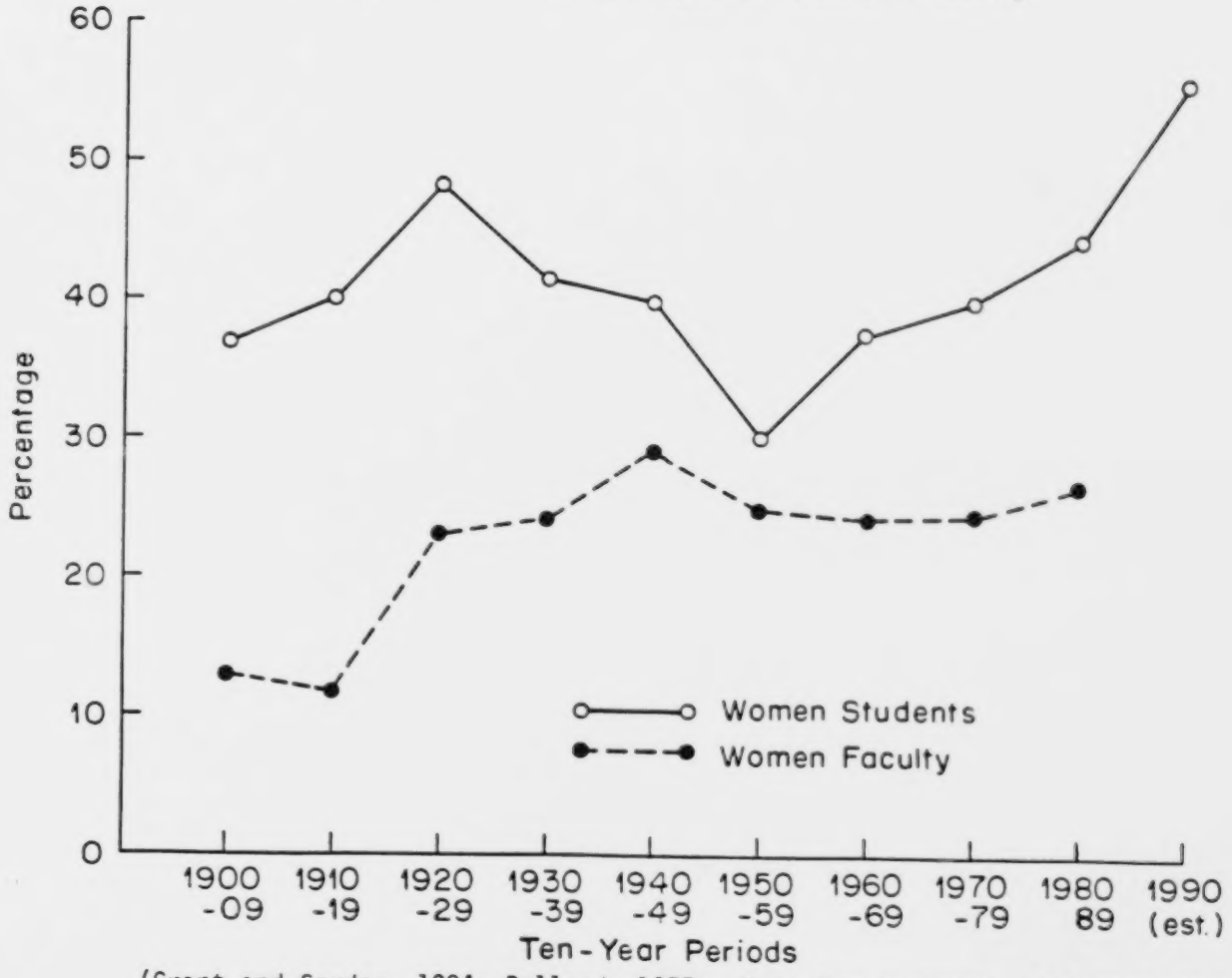
Ph. D.s Awarded & Faculty Appointments by Five-Year Periods, 1945-1979



Ph.D.s Awarded and Faculty Appointments, by Five-Year Periods, 1950-84 (Bowen and Schuster, 1986, p. 176)

FIGURE 3

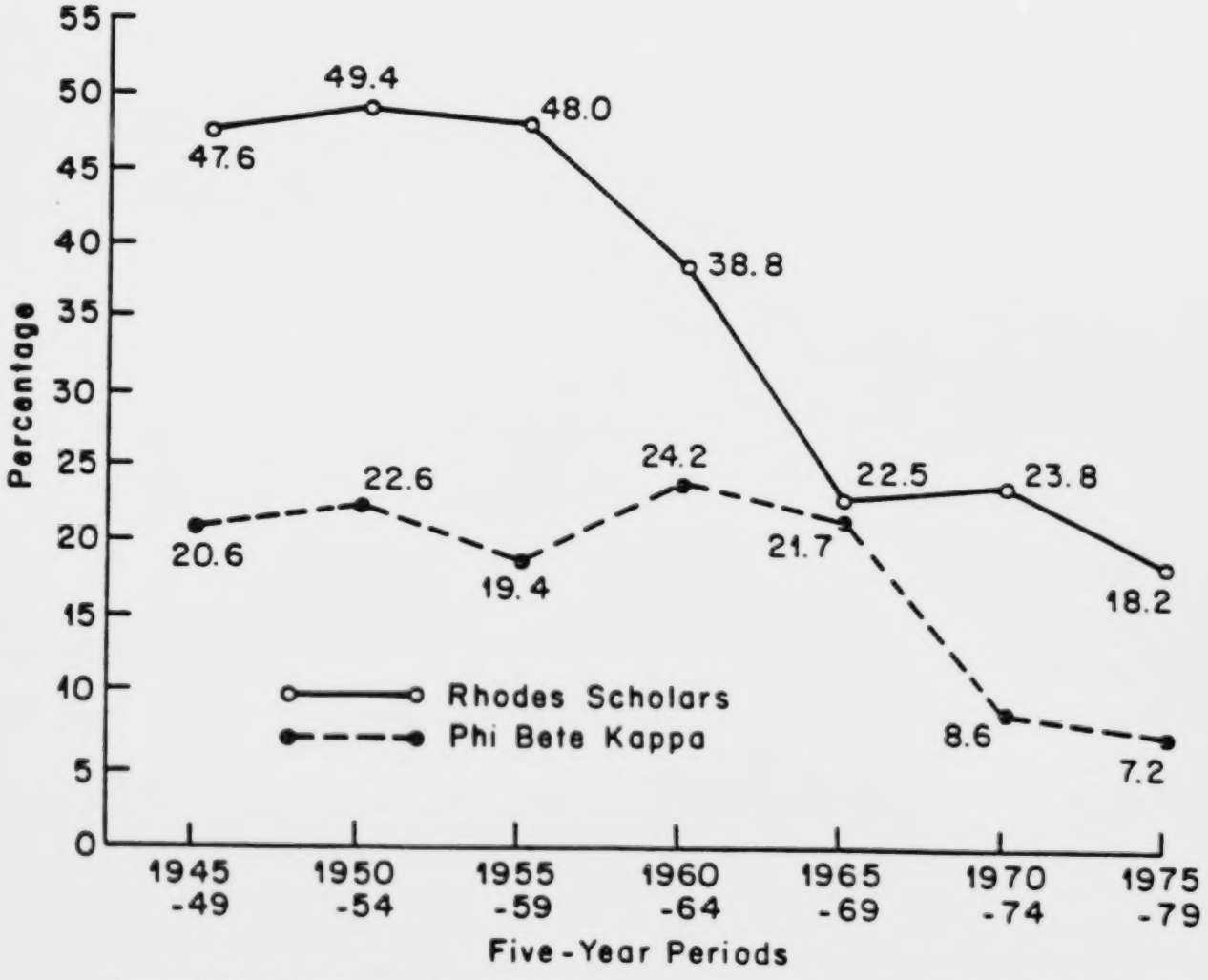
Percentages of Women Enrolled in American Colleges & Universities, Compared with Percentages of Women Faculty



(Grant and Snyder, 1984; Pollard, 1977; U.S. Commissioner, 1900-1930; U.S. Office of Education, 1940 to present)

FIGURE 4

Percentage of American Rhodes Scholars & Phi Beta Kappa Recipients Choosing Academic Careers, by Five-Year Periods, 1945-1979



Percentage of American Rhodes Scholars and Phi Beta Kappa Recipients Choosing Academic Careers, by Five-Year Periods, 1945-1979 (Bowen and Schuster, 1986, p. 228)